

IN THE ABSTRACT

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## ABSTRACT OF THE DISCLOSURE

In a method of multi-dimensionally encoding a user data stream of user words into a channel data stream of channel words evolving in a one-dimensional direction of infinite extent, a user word is encoded into an NRZ channel word by selecting a NRZ channel word from a code table depending on the user word and the current state of an underlying finite-state-machine. A NRZ channel word comprises a sequence of NRZ channel symbols of NRZ channel bits having a one-dimensional interpretation along said one-dimensional direction and wherein states of an underlying finite-state-machine describing the characteristics of the multi-dimensional code are defined by NRZI channel bits of the previous channel word and by NRZ channel symbols of the current channel word. The NRZ channel symbols are transcoded into NRZI channel symbols by a one-dimensional 1T-precoding operation including an integration modulo 2, said 1T-precoding operation being carried out along said one-dimensional direction of infinite extent. The finite-state-machine is put into a new state selected from the code table depending on said user word and the current state of said finite-state-machine together with encoding a user word into a channel word.